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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,644	04/06/2006	Tsuyoshi Suda	075954-010100	6544

33717 7590 01/15/2010  
GREENBERG TRAURIG LLP (LA)  
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INTELLECTUAL PROPERTY DEPARTMENT  
SANTA MONICA, CA 90404

EXAMINER
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OLSEN, KAJ K

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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01/15/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/534,644	<b>Applicant(s)</b> SUDA ET AL.	
	<b>Examiner</b> KAJ K. OLSEN	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-22 and 24-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-18, 20-22, 24-36, 38 and 39 is/are rejected.
- 7) ☒ Claim(s) 19 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/9/09; 11/17/09</u> .                                        | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The outstanding objection to the disclosure has been withdrawn in view of the 9/9/2009 amendment.

### ***Claim Objections***

2. Claim 21 is objected to because of the following informalities: There are some question marks in claim 21 that the examiner presumes should be lines. Compare claim 3 with claim 21. Appropriate correction is required.
3. The outstanding objections to claims 5 and 23 have been withdrawn in view of the cancelled claims.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 38 and 39 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966). Use claims are generally deemed to not constitute patentable subject matter under 35 U.S.C. 101. See MPEP 2173.05(q).

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6. If applicant wishes to have claims drawn to the process of utilizing the hydrogen gas sensor, applicant should instead claim a process of measuring hydrogen gas concentration comprising utilizing the sensor of claim 1 or 2, placing both the first and second electrodes in the same atmosphere so thereby the two electrodes contact the same hydrogen gas simultaneously. Any submitted claim to a process of utilizing the sensor should also include a step of measuring the hydrogen concentration as well.

7. The outstanding rejections of claims 10, 14-16, 28, and 32-34 have been withdrawn in view of the amendment to those claims.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 6, 9, 21, 22, 24 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Taniguchi (US 2002/0070109 A1) (hereafter “Taniguchi ‘109”) with or without evidence from Taniguchi et al (USP 5,935,398) (hereafter “Taniguchi ‘398”).

9. Concerning Claim 1, Taniguchi ‘109 teaches a hydrocarbon sensor with a substrate and a solid electrolyte with two electrodes described in [0035] and [0037] and best exemplified by Figure 1B. The first electrode (12a) is made from "a paste containing Au particles and Al particles" which is baked, "forming the electrode containing Au and Al [0018]." The other electrode (12b) can be "made of Pt [0040]." These two electrodes, with their correspondingly

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different compositions, inherently differ in chemical potential for hydrogen gas. The limitation of hydrogen gas being detected on a generated electromotive force is intended use language and has not been given patentable weight.

10. Concerning Claim 2, Taniguchi '109 teaches a hydrocarbon sensor with a substrate and a solid electrolyte with two electrodes [0035] and [0037], the first electrode being made from "a paste containing Au particles and Al particles" which is baked, "forming the electrode containing Au and Al [0018]." The other electrode can be "made of Pt [0040]." These two electrodes, with their correspondingly different compositions, inherently differ in absorption-dissociation active degree for hydrogen gas. The limitation of hydrogen gas being detected on a generated electromotive force is intended use language and has not been given patentable weight.

11. With respect to the new claim language of claims 1 and 2 requiring the electrode "function[s]" as detecting or standard electrodes, these new limitations do not further define the actual electrodes, but merely define how applicant intends to utilize the device as a gas sensor. Moreover, even if the examiner were to interpret these new limitations as further limiting the gas in question, because Taniguchi '109 discloses only two electrodes, then one of those electrodes would be functioning as the detecting electrode and one of the electrodes would be functioning as a standard electrode. This is particularly evidenced by Taniguchi '398 where a hydrocarbon sensor analogous to the sensor of Taniguchi '109 is being utilized as an electromotive force sensor in a manner analogous to the present invention. See fig. 2 and 3 and col. 3, ll. 30-43.

12. Concerning Claims 3-4, Taniguchi '109 teaches a hydrocarbon sensor with a substrate and a solid electrolyte with two electrodes [0035] and [0037], the first electrode being made from "a paste containing Au particles and Al particles" which is baked, "forming the electrode

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containing Au and Al [0018].” The other electrode can be “made of Pt [0040].” These two electrodes, with their correspondingly different compositions which inherently exhibit the standard electromotive forces required in claim 3.

13. Concerning Claim 6, Taniguchi ‘109 teaches all the limitations for claim 1. Further, Taniguchi ‘109 discloses Figure 1B, which shows two electrodes (12a and 12b) which are placed in a planar sandwich configuration around the electrolyte (11). This planar configuration reads on the claimed “plate,” and the sandwich configuration reads on the placement of the electrolyte between the electrodes.

14. Concerning Claims 9 and 27, Taniguchi ‘109 teaches a solid electrolyte [0035].

15. Concerning Claims 21-22, Taniguchi ‘109 teaches all the limitations of claim 2. Further, Taniguchi ‘109 teaches a hydrocarbon sensor with a substrate and a solid electrolyte with two electrodes[0035] and [0037], the first electrode being made from "a paste containing Au particles and Al particles" which is baked, “forming the electrode containing Au and Al [0018].” The other electrode can be “made of Pt [0040].” These two electrodes, with their correspondingly different compositions which inherently exhibit the standard electromotive forces required in claim 21.

16. Concerning Claim 24, Taniguchi ‘109 teaches all the limitations for claim 2. Further, Taniguchi ‘109 discloses Figure 1B, which shows two electrodes (12a and 12b) which are placed in a planar sandwich configuration around the electrolyte (11). This planar configuration reads on the claimed “plate,” and the sandwich configuration reads on the placement of the electrolyte between the electrodes.

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17. Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Schoeb (US 2002/0000228).

18. Concerning Claim 20, Schoeb teaches in Figure 8 as gas forwarding apparatus which contains a gas sensor portion 8 for determining a gas composition. As described in [0038], gas sensor 8 comprises a photo sensor portion 8b and a light source 8c. Light source 8c can be an LED. By applicant's own definition, the Fail-Safe function can be the detection of an LED by a photo sensor.

19. With respect to the amendment to the claim, whether or not the structure of Schoeb is utilized for a sensor component of a hydrogen gas sensor does not further define the actual apparatus, but merely how applicant intends to utilize the set forth structure. The only structure claim 20 explicitly sets forth appears to be is an LED and a photo sensor which Schoeb sets forth.

***Claim Rejections - 35 USC § 103***

20. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

21. Claims 7, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi '109 as applied to Claims 1-6, 9, 21-24 and 27 above, and further in view of Makundan et al (US 6,656,336).

22. Concerning Claim 7, Taniguchi '109 discloses a gas sensor with two electrodes with different chemical potentials for hydrogen gas. Taniguchi '109 does not appear to expressly disclose that the electrodes may be arranged as rods on a substrate with an electrolyte disposed in

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between. However, Makundan discloses Figure 1B, a hydrocarbon sensor in which two electrodes 12 and 16 are disposed on an electrolyte 10. Electrode 16 is obvious in the shape of a rod. At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the electrodes of Taniguchi '109 to be rods as those of Makundan because the positioning of the electrodes yields no significant functional difference and are therefore are a matter of obvious engineering choice. Although only one electrode in Makundan is actually shaped like a rod, one of ordinary skill in the art would not have difficulty discerning that electrode 12 could be fashioned in the same way.

23. Concerning Claim 25, Taniguchi '109 discloses a gas sensor with two electrodes with different chemical potentials for hydrogen gas. Taniguchi '109 does not appear to expressly disclose that the electrodes may be arranged as rods on a substrate with an electrolyte disposed in between. However, Makundan discloses Figure 1B, a hydrocarbon sensor in which two electrodes 12 and 16 are disposed on an electrolyte 10. Electrode 16 is in the shape of a rod. At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the electrodes of Taniguchi '109 to be rods as those of Makundan because the positioning of the electrodes yields no significant functional difference and are therefore are a matter of obvious engineering choice. Although only one electrode in Makundan is actually shaped like a rod, one of ordinary skill in the art would not have difficulty discerning that electrode 12 could be fashioned in the same way.

24. Claims 8 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi '109 as applied to Claims 1-6, 9, 21-24 and 27 above, and further in view of Sugiyama et al (US 4,704,536).



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25. Concerning Claim 8, Taniguchi '109 discloses a gas sensor with two electrodes with different chemical potentials for hydrogen gas with an electrolyte disposed in between.

Taniguchi '109 does not appear to expressly disclose that the electrodes may be arranged as concentric cylinders. However, Sugiyama discloses Figure 9, a gas sensor with two co-axial electrodes 23 and 24 configured as concentric cylinders. At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the gas sensor configuration of Taniguchi '109 with the concentric, cylindrical electrodes in Sugiyama because the positioning of the electrodes yields no significant functional difference, and therefore concentric cylindrical electrodes are a matter of an obvious engineering choice.

26. Concerning Claim 26, Taniguchi '109 discloses a gas sensor with two electrodes with different chemical potentials for hydrogen gas. Taniguchi '109 does not appear to expressly disclose that the electrodes may be arranged as rods on a substrate with an electrolyte disposed in between. However, Sugiyama discloses Figure 9, a gas sensor with two co-axial electrodes 23 and 24 configured as concentric cylinders. At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the gas sensor configuration of Taniguchi '109 with the concentric, cylindrical electrodes in Sugiyama because the positioning of the electrodes yields no significant functional difference, and therefore concentric cylindrical electrodes are a matter of an obvious engineering choice.

27. Claims 10 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi '109 in view of Yun et al (WO 01/89021), from here on in referred to as Yun.

28. Concerning Claims 10 and 28, Taniguchi '109 discloses all the limitations of claim 9. Taniguchi '109 does not appear to expressly disclose the electrolyte comprise an internal

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scaffold of a material such as glass wool. However, Yun discloses in the abstract an electrolyte in which contains an electrospun matrix of polymeric, electrolytic material into which lithium salt-dissolved organic electrolytes are incorporated. One of the advantages of this construction as outlined by Yun is a "good mechanical strength." At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the electrolyte of Taniguchi '109 with an internal matrix like Yun because one would wish to take advantage of the improved mechanical strength such a construction would offer.

29. Claims 11-16 and 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi '109 as applied to Claims 1-6, 9, 21-24 and 27 above, and further in view of Christen et al (USP 4,390,869).

30. Concerning Claims 11-13, Taniguchi '109 teaches a hydrocarbon sensor with all the limitations of claim 1. The preambles for each claim (e.g. "a hydrogen gas leak controlling system" or "a hydrogen gas leak information transmitting system," etc.) are not structurally limiting and have not been given patentable weight. Taniguchi '109 does not expressly teach that a voltage comparator be used in the apparatus. However, Christen teaches a gas sensing signaling system. In particular, Christen teaches a figure 7 which includes three comparators 101/1, 101/2, 101/3. These are voltage comparators (col. 12, lines 21-33). At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to include a voltage comparator like that from Christen in the apparatus of Taniguchi '109 because of the necessary advantages of doing so, such as eliminating false alarms or alarms for negligible concentrations of gas.

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31. Concerning Claims 14-16, Taniguchi '109 in view of Christen teaches a hydrocarbon sensor with all the limitations of claims 11-13. The preambles for each claim (e.g. "a hydrogen gas leak controlling system" or "a hydrogen gas leak information transmitting system," etc.) are not structurally limiting and have not been given patentable weight. Further, the only further limiting structural features of these claims are the presence of a Schmitt trigger (Schmitt inverter), as functional language modifying the trigger has not been given patentable weight. Taniguchi '109 does not expressly teach that a voltage comparator be used in the apparatus, nor does Taniguchi '109 teach the use of a Schmitt trigger. However, Christen teaches a gas sensing signaling system. In particular, Christen teaches a figure 7 which includes three comparators 101/1, 101/2, 101/3. These are voltage comparators (col. 12, lines 21-33). Further, Christen teaches the use of Schmitt triggers to distinguish between warning signals and alarm signals (col. 15, lines 32-43). At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to include a voltage comparator and Schmitt trigger like that from Christen in the apparatus of Taniguchi '109 because of the necessary advantages of doing so, such as eliminating false alarms or alarms for negligible concentrations of gas. Concerning Claims 29-31, Taniguchi '109 teaches a hydrocarbon sensor with all the limitations of claim 2. The preambles for each claim (e.g. "a hydrogen gas leak controlling system" or "a hydrogen gas leak information transmitting system," etc.) are not structurally limiting and have not been given patentable weight. Taniguchi '109 does not expressly teach that a voltage comparator be used in the apparatus. However, Christen teaches a gas sensing signaling system. In particular, Christen teaches a figure 7 which includes three comparators 101/1, 101/2, 101/3. These are voltage comparators (col. 12, lines 21-33). At the time of the invention, it would have been *prima facie*

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obvious to one of ordinary skill in the art to include a voltage comparator like that from Christen in the apparatus of Taniguchi '109 because of the necessary advantages of doing so, such as eliminating false alarms or alarms for negligible concentrations of gas.

32. Concerning Claims 32-34, Taniguchi '109 in view of Christen teaches a hydrocarbon sensor with all the limitations of claims 29-31. The preambles for each claim (e.g. "a hydrogen gas leak controlling system" or "a hydrogen gas leak information transmitting system," etc.) are not structurally limiting and have not been given patentable weight. Further, the only further limiting structural features of these claims are the presence of a Schmitt trigger (Schmitt inverter), as functional language modifying the trigger has not been given patentable weight. Taniguchi '109 does not expressly teach that a voltage comparator be used in the apparatus, nor does Taniguchi '109 teach the use of a Schmitt trigger. However, Christen teaches a gas sensing signaling system. In particular, Christen teaches a figure 7 which includes three comparators 101/1, 101/2, 101/3. These are voltage comparators (col. 12, lines 21-33). Further, Christen teaches the use of Schmitt triggers to distinguish between warning signals and alarm signals (col. 15, lines 32-43). At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to include a voltage comparator and Schmitt trigger like that from Christen in the apparatus of Taniguchi '109 because of the necessary advantages of doing so, such as eliminating false alarms or alarms for negligible concentrations of gas.

33. Claims 17-18 and 35-36 are rejected under 35 U.S.C 103(a) as being unpatentable over Taniguchi '109 as applied to claims 1-6, 9, 21-24 and 27 above in view of Maki et al (US 2004/0026268), from here on referred to as Maki. Concerning Claim 17, Taniguchi '109 teaches all the limitations of claim 1. Taniguchi '109 does not expressly teach that there be a plurality of

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hydrogen gas sensors arranged on the same substrate. However, Maki teaches an apparatus which is an electromotive force type gas sensor comprising a substrate and a gas sensor on that substrate (Maki, claim 1). Further, Maki teaches a claim 8 drawn to an electromotive force gas sensor with two or more electromotive force gas sensors on the same substrate. At the time of the invention, it would have been *prima facie* obvious to those of ordinary skill in the art to provide a plurality of gas sensors like in Taniguchi '109 on the same substrate like in Maki because of the versatility such a configuration would have, such as the ability to allow for failure of some gas sensors without failure of the whole apparatus as well as the ability to possibly discern a target gas profile or concentration gradient. Concerning Claim 18, Taniguchi '109 teaches all the limitations of claim 1. Further, "for detecting an electromotive force from said hydrogen gas sensor" and "is detected in dependence on the intensity of said electromotive force" are statements of intended use and not given patentable weight. Taniguchi '109 does not expressly teach an electric circuit be provided. However, Maki teaches an apparatus which is an electromotive force type gas sensor comprising a substrate and a gas sensor on that substrate (Maki, claim 1). Further, Maki teaches a power supply circuit be present on the substrate, which reads on the electric circuit (page 9, [0110]). At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to use the power supply circuit of Maki in the device of Taniguchi '109 because one would wish to process the signals output from the electrodes.

34. Concerning Claim 35, Taniguchi '109 teaches all the limitations of claim 2. Taniguchi '109 does not expressly teach that there be a plurality of hydrogen gas sensors arranged on the same substrate. However, Maki teaches an apparatus which is an electromotive force type gas

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sensor comprising a substrate and a gas sensor on that substrate (Maki, claim 1). Further, Maki teaches a claim 8 drawn to an electromotive force gas sensor with two or more electromotive force gas sensors on the same substrate. At the time of the invention, it would have been *prima facie* obvious to those of ordinary skill in the art to provide a plurality of gas sensors like in Taniguchi '109 on the same substrate like in Maki because of the versatility such a configuration would have, such as the ability to allow for failure of some gas sensors without failure of the whole apparatus as well as the ability to possibly discern a target gas profile or concentration gradient. Concerning Claim 36, Taniguchi '109 teaches all the limitations of claim 2. Further, "for detecting an electromotive force from said hydrogen gas sensor" and "is detected in dependence on the intensity of said electromotive force" are statements of intended use and not given patentable weight. Taniguchi '109 does not expressly teach an electric circuit be provided. However, Maki teaches an apparatus which is an electromotive force type gas sensor comprising a substrate and a gas sensor on that substrate (Maki, claim 1). Further, Maki teaches a power supply circuit be present on the substrate, which reads on the electric circuit (page 9, [0110]). At the time of the invention, it would have been *prima facie* obvious to one of ordinary skill in the art to use the power supply circuit of Maki in the device of Taniguchi '109 because one would wish to process the signals output from the electrodes.

35. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi '109 in view of Taniguchi (US 2003/0024813) (hereafter "Taniguchi '813"). The use of Taniguchi '813 here is necessitated by new claims 38 and 39.

36. With respect to these new claims as best understood (see the 101 rejection above), these claims are drawn to a process whereby the hydrogen sensor of claims 1 and 2 are placed in the

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same atmosphere to contact the hydrogen gas simultaneously. Taniguchi '109 does not explicitly disclose the contacting of the electrodes with hydrogen gas and the explicit disposition of both electrodes in the same atmosphere. Taniguchi '813 discloses a variation on its earlier hydrocarbon sensor where the sensor is configured to measure hydrogen gas by contacting the two measuring electrodes in the same gas environment. See the embodiment of fig. 7B and par. 0077. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to configure the sensor of Taniguchi '109 for the measurement of hydrogen gas and to contact each of the electrodes in the same atmosphere as suggested by Taniguchi '813 to extend the utility of the sensor of Taniguchi '109 to other useful gas environments.

#### ***Allowable Subject Matter***

9. Claims 19 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The examiner is withdrawing the combination of Taniguchi in view of Schoeb because this examiner sees no obvious reason to combine these two teachings together.

#### ***Response to Arguments***

37. Applicant's arguments filed 9-9-2009 have been fully considered but they are not persuasive. Applicant urges that Taniguchi '109 is directed at a hydrocarbon sensor and not a hydrogen sensor. However, the use of the device is only the intended use and the intended use

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need not be given further due consideration in determining patentability. Furthermore even if the examiner were to give the intended use further due consideration, the same inventor disclosed in Taniguchi '813 that an analogous combination of electrodes to that of the Taniguchi '109 relied on above can be utilized as a hydrogen sensor as well. See abstract and par. 0077.

38. Applicant further urges that par. 0037-0040 do not teach the use of Al and Au for one electrode and Pt for the other. The examiner believes applicant is misreading Taniguchi '109 here. In particular, Taniguchi '109 states that only one of the electrodes needs to be electrode A (par. 0037) and Taniguchi '109 then states that the anode or cathode that is not the A electrode (i.e. the *other* electrode) can be made of Pt (par. 0040). Hence one of the electrodes is made with an alloy of Au and Al, while the other electrode is Pt. Pt and Au-Al alloy would clearly have different chemical potentials and would thereby read on the claimed electrodes. This is further elaborated in par. 0063 and 0064 where a cathode is made out of the Au-Al alloy and Pt is then utilized for the anode.

39. Applicant urges that Taniguchi '109 chose an Au and Al alloy for its cathode because of its ability to block oxygen. It is unclear the relevancy of this point seeing as the claims currently do not specify any particular combination of electrodes that would read away from the combination of Taniguchi. Moreover as par. 0077 of Taniguchi '813 evidences, an electrode that blocks oxygen can also be incorporated into a hydrogen sensor as well.

40. Applicant urges that amended claim 20 reads free of the teaching of Schoeb. However, as discussed in the modified rejection above, applicant's amendment does not further recite any structure for the fail safe device. Because the use of the device as a fail-safe function is only the



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intended use, the further recitation that this fail-safe device is for a hydrogen sensor is only further intended use and still doesn't define the fail-safe free of Schoeb.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (571) 272-1344. The examiner can normally be reached on Monday through Friday from 6:00 A.M. to 2:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kaj K Olsen/  
Primary Examiner, Art Unit 1795

December 22, 2009